

MAT 121 – Online College Algebra Spring Semester, 2015
Section G-81/82

INSTRUCTOR: Dr. Harry S. (Steve) Mills, EDBH 134K, 970-339-6238, E-mail: Use mail tool on MyAims course website. (Click on Classlist from the main Navigation bar and then click on "Mills, Harry.") Emergency e-mail: steve.mills@aims.edu

IMPORTANT: The student is responsible for reading, understanding, and complying with all [Standard Syllabus Policies](http://www.aims.edu/inside/policies/standard-syllabus/) (<http://www.aims.edu/inside/policies/standard-syllabus/>), unless otherwise stated, below.

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Catalog Description: Includes equations and inequalities, functions and their graphs, exponential and logarithmic functions, linear and non-linear systems, graphing of the conic sections, introduction to sequences and series, permutations and combinations, the binomial theorem, theory of equations and an introduction to matrices and determinants. 4 credit hours

Prerequisites: Prerequisite(s): MAT 055 or higher (except MAT 090, MAT 103, MAT 107, MAT 108, MAT 109, MAT 112, and MAT 120), with grade of C or better, (except MAT 135 or BUS 226 - minimum grade of B or better) or assessment test. Registration in lab class MAT 093 may also be required depending on assessment score. Four credits.

Required Materials:

- **Textbook: College Algebra: Concepts through Functions**, 3rd Edition, Sullivan and Sullivan.
 1. New Book, with Access Code: ISBN-10: 0-321-92572-6 or ISBN-13: 978-0-321-92572-5 OVER \$200!!!! Man oh man! Spendy.
 2. Used Book has same ISBN, but if it's not brand-new and shrink-wrapped, you're going to have to buy online access to MyLab, separately.
 3. Online Access to MyLab, with eText included This is under \$100, and you can buy it directly through the MyLab site. PROBABLY CHEAPEST ALTERNATIVE, ESPECIALLY IF YOU CAN BEG/BORROW/RENT A SIMILAR TEXTBOOK, SEPARATELY. YOU MAY JUST WANT THE E-BOOK THAT COMES WITH MYLAB AND BE DONE!
 4. The publisher also offers a loose-leaf printed version at what they call a discount, but it doesn't look like it comes with access to MyLab.
 5. Students who purchased access within the last 12 months *may* be able to get free access to the MyLab.

- **Scientific Calculator:** The TI 30X IIB or comparable product with a Previous Entry feature. When you can see what you entered, you'll make fewer mistakes, be able to fix any mistakes you make, and explore patterns, by changing one thing in a big formula, and seeing how the output changes, without having to re-enter the whole long expression. What you want is a calculator just one step below a graphing calculator, that lets you edit the entries like you do in a graphing calculator.

GRAPHING CALCULATORS ARE NOT PERMITTED ON TESTS, ALTHOUGH ELECTRONIC GRAPHING WITH ONLINE GRAPHERS OR GRAPHING CALCULATORS MAY COME UP ON THE HOMEWORK.

Course Website: To access the website, set your web browser location to <http://www.aims.edu> and click on the My Aims link on the upper right of the page, and click on STUDENT tab. From that window, the Aims Online link is a big panel on the left of the screen. Click on that, and select this course (College Algebra) from the links on that page. You may need to set the semester popup list to the current semester.

As this is an online course, the course website will be the focal point of our interactions, even though you will likely spend most of your time on the Pearson MyLab website, doing homework, and most other activities.

Pearson MyLab and Mastering Website: Online delivery of instruction will be performed by [Pearson MyLab and Mastering](#), a product of Pearson Learning. This learning tool offers video lectures, exercises, quizzes, and on-demand help. It's where you'll do your homework and do most of your learning, I expect.

Grades: Five Categories: Tests, Homework, Final Test, Weekly Essays and Writing Projects.

- **Test Average** will count 40% of the final grade. You will go to an Aims Testing Center (Greeley, Loveland or Fort Lupton) to take each test. Special arrangements can be made with far-distant students for the taking of proctored tests at approved testing sites. Approval is obtained by making a request to The Aims Assessment Center: [Assessment Center <assessment@aims.edu>](mailto:assessment@aims.edu)

Scientific (NOT graphing) calculators are the only electronic devices permitted during testing (On the Chapter Tests AND the Final).

- **Homework** will count 20% of the final grade. Homework is assigned through Pearson Learning, and MyMathLab will deliver instruction, tutorials, and generate as many examples as you ask. This is a 20% of the points, but the bread and butter of the course. It's where you *learn* this stuff.

- **Final Test** will count 20% of the final grade. There are TWO days available for the Final. Monday and Tuesday, May 5th and May 6th.

- **Weekly 5-minute Essays** will count 10% of the final grade. Each week, I will open up a discussion group on the course website. This will be an easy part of your weekly routine that may even be fun and should help you connect with your classmates. Classmates are often the best source of tips for learning. At some point near the end of week x (before Monday of the following week), the student will submit the answer to three questions in Week x Essay (under Discussions on the Course Website):

1. What did I learn this week?
2. What did I struggle with and still not quite understand?
3. In general, how is the course going? What's working/not-working for you?

• **Writing Projects** will count 10% of the final grade. There are 4 topics. You may employ both hand-writing and type-writing in these projects, depending on the assignment, and whatever works best for you. For more details, see the [Writing Projects](#) handout.

Grading Scale: 90% - 100% A 80% - 89% B 70% - 79% C 60% - 69% D

How to Operate: My biggest thing, early, is to clear away the distractions, and keep you focused on the fast path to completion. There are *many* resources available, but only a minimum number of activities that I *require*.

1. Save and/or print a copy of the following: (The documents linked, below will also be e-mailed to you.)
 - a. [Schedule](#).
 - b. [Beginnings](#)
 - c. [Student Registration Handout for Pearson site](#)
2. Watch my [Orientation Video](#), if you haven't, already.
3. Read and follow the instructions on the Beginnings and Student Registration Handouts that you downloaded/printed.
4. Get started on the Homework I assigned on the Pearson site.
5. Check in on Aims Online about once per week.
6. Keep up with the homework, as indicated on the Schedule.
7. Leave yourself time to do Test Review Activities (Test Videos, Practice Tests (old tests))
8. Finish Writing Projects in a timely manner. The first 2 are due with Exam 2, after we finish Chapter 2. I would start my Writing Project 2 after taking Exam 1.

Stop-Out: Students who are inactive for 2 weeks will be reported as Stop-Out and dropped from the roster.

General Education Competencies: This course satisfies the following General Education competencies: Critical Thinking, Technology, and Mathematics. It also satisfies the Aims requirement for Writing. Refer to Aims Community College catalog for descriptions.

Learning Outcomes:

- A. Be familiar with set notations, subsets of the real numbers and properties of real numbers.
- B. Perform algebraic manipulations including working with exponents, radicals, polynomial operations, factoring and algebraic fractions.
- C. Solve the following types of equations: linear, quadratic, equations involving radicals, equations in quadratic form and equations involving absolute value.
- D. Work with formulas including formula evaluation and solving a formula for any of the variables.
- E. Read and analyze problems in the form of word problem applications and obtain solutions using equations.
- F. Solve first degree inequalities, higher degree inequalities and inequalities involving absolute value.
- G. Recognize and graph linear functions, rational functions, absolute value functions, and graph inequalities in two variables.

- H. Work with function notation and demonstrate knowledge of the meaning “function”.
- I. Demonstrate an understanding of function composition, one-to-one functions and inverse functions.
- J. Evaluate and graph exponential functions.
- K. Evaluate and graph logarithmic functions.
- L. Work problems and solve equations containing exponential and logarithmic functions.
- M. Use at least two of the following techniques to solve linear and non-linear systems of the equations: substitution, addition, Gaussian elimination, Cramer’s rule.
- N. Have some familiarity with matrices and operations involving matrices.
- O. Graph systems of inequalities.
- P. Graph conic sections including circles, parabolas, ellipses and hyperbolas.
- Q. Identify the conic section represented by a given second degree equation.
- R. Work with series notation and sequence formulas, and counting principles.
- S. Apply the Binomial Theorem.
- T. Demonstrate an understanding of proof by mathematical induction.
- U. Present topics in theory of equations.
- V. Perform synthetic division.
- W. Use the Remainder Theorem and the Factor Theorem to factor and evaluate polynomials.
- X. Solve polynomial equations using the Rational Root Theorem and/or approximation techniques.
- Y. Write and speak clearly and logically about topics related to algebra.
- Z. Demonstrate the ability to select and apply contemporary forms of technology to solve problems or compile information in the study of algebra.

Tutoring Information: Drop-in, individual, and guided study group tutoring is available to currently enrolled Aims students. For available subjects, hours, and additional questions, please call 339-6541 for Greeley, 667-4611 Ext. 3304 for Loveland, and 303-718-5905 for Fort Lupton services. Also, please visit our website at <http://www.aims.edu/student/learning-commons/tsi/index.php> for current information.

Students with Disabilities: Any student who feels s/he may need an accommodation based on the impact of a disability should contact the Disability Access Services (DAS) office privately to discuss her/his specific needs. Please be aware that before accommodations can be made, they must be approved through the DAS office. Students should contact the DAS office at 970-339-6388 or disabilities@aims.edu to set up an appointment to discuss the process of requesting reasonable accommodations. DAS is located in the College Center in the One-Stop Shop area on the 1st floor.

Student Conduct and Civility Statement: *Let common sense and common courtesy prevail!*
If they do *not* prevail, the student will be held to the letter and spirit of our Student Conduct Policy, which is discussed here:

<http://www.aims.edu/student/conduct/code-of-conduct?expanddiv=item1#expectations>

Again, standard syllabus information is found here:

<http://www.aims.edu/inside/policies/standard-syllabus/>

Makeup Tests, Deadlines and such: I leave a 3-day window (Tuesday, Wednesday, Thursday) during Exam Weeks, for you to come to one of our testing centers, or an approved testing center anywhere in the world. Late tests will not be given. If you miss *one* test, that test score will be treated as your lowest score, and will be dropped. If you miss *two* tests, you’re in hot water. I reserve the right to make

exceptions, but it's *very* difficult to get an exception, with lots of documentation and/or *unanimous* consent of *all* your classmates!

The Final Exam will have only a 2-day window, Monday and Tuesday, May 4th and May 5th.

The *only* deadline on the homework is also that Tuesday, May 5th date. Of course, you'll want to have homework finished before taking the Exam that covers it, and I will spot-check the homework progress and let you know if you appear to be behind schedule.